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(54) **METHOD AND SYSTEM FOR NON
DISRUPTIVELY ASSIGNING LINK
BANDWIDTH TO A USER IN A HIGH SPEED
DIGITAL NETWORK**

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444

(56) References Cited

U.S. PATENT DOCUMENTS

5,231,631 * 7/1993 Buhrke et al. 370/230

5,359,592 * 10/1994 Corbalis et al. 370/233
5,638,363 * 6/1997 Gittins et al. 370/358
5,687,167 * 11/1997 Bertin et al. 370/443
5,699,355 * 12/1997 Natarajan 370/443
5,742,594 * 4/1998 Natarajan 370/443
5,748,629 * 5/1998 Caldara et al. 370/389
5,841,777 * 3/1999 Cohen 370/443
5,850,398 * 12/1998 King, Jr. 370/230
5,881,050 * 3/1999 Chevalier et al. 370/230
5,905,730 * 5/1999 Yang et al. 370/235
5,909,443 * 6/1999 Fichou et al. 370/412
5,912,894 * 6/1999 Duault et al. 370/468

* cited by examiner

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(57) ABSTRACT

A method based on predefined connection priorities for
assigning link bandwidth to a requesting user in a high speed
digital network interconnecting network users through a
path including network nodes connected through high speed
links.

According to this method, a predefined reservable link
bandwidth is split into so-called nominal bandwidth portions
and common bandwidth portions, both assignable to the
same connections on a priority basis. Each of the common
bandwidth priorities is individually related to a nominal
bandwidth priority through a predefined relationship, mak-
ing the common bandwidth priorities always lower than any
nominal priority. In this way the requested link connection
bandwidth, whatever be its nominal priority, is made pre-
emptible primarily on all common bandwidth, thus avoiding
the disruption of any network connection which is already
established.

7 Claims, 10 Drawing Sheets

